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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/568,394

10/10/2006

Erwin Bayer

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08/04/2009

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EXAMINER

NGUYEN, NINH H

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

08/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/568,394 | Applicant(s) BAYER ET AL. | |
| | Examiner Ninh H. Nguyen | Art Unit 3745 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-20, 22 and 24-30 is/are rejected.
- 7) ☒ Claim(s) 21, 23 and 31-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/13/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 33 is objected to because “27” on line 1 of the claim should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18, 25, 26, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. (5,667,898; Anderson from now on).

Anderson discloses a run-in coating for a gas turbine, comprising: an intermetallic titanium-aluminum material adapted to be applied to a housing of the gas turbine and adapted to seal a radial gap between the housing of the gas turbine and rotatable rotor blades of the gas turbine (col. 2, lines 41-60).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19, 20, 22, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Darolia et al. (6,982,126; Darolia from now on).

Anderson discloses all the limitations except the coating does not include a stepped porosity as claimed.

Darolia teaches a turbine shroud coated with a thermal barrier coating (TBC) (col. 3, lines 41-43) wherein the TBC is more porous in the region adjacent to the shroud than the region facing the rotor blades for reducing thermal conductivity and increasing erosion and impact resistance for the shroud (col. 4, lines 37-41).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the run-in coating of Anderson with the inner region adjacent the shroud being more porous than the region facing the rotor blades for the purpose of improving impact and erosion resistance for the coating as taught by Darolia.

Regarding claim 22, Darolia teaches the composition of the coating can be identical or constant (col. 5, lines 45-48) with the regions adjacent the housing and the region facing the rotor blades being processed differently to yield different porosities in the regions.

5. Claims 24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson in view of Applicant admitted prior art.

Anderson discloses all the limitations except the housing is not formed of an intermetallic titanium-aluminum material as claimed.

However, on page 4, lines 7-13 of the disclosure, Applicant admits that casing of turbine compressors are increasingly made of intermetallic titanium-aluminum material due to superior properties over titanium alloys.

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It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the run-in coating of Anderson with the housing made of an intermetallic titanium-aluminum material for the purpose of improving performance of the turbine.

Allowable Subject Matter

6. Claims 21, 23, 31, 32, 34, and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claim 33 would be allowable if rewritten to overcome the objection set forth in the "Claim Objections" of this Office action and to include all of the limitations of the base claim and any intervening claims.

Prior Art

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 3 patents.

Anderson et al. (5,340,783), Otfinotski (5,024,884), and Eisenlohr (3,340,084) are cited to show different coated articles.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).

/Ninh H. Nguyen/
Primary Examiner, Art Unit 3745

Nhn
8/4/2009